```
=> s E4;D
L2            1 "SIALIC ACID PHOSPHATE SYNTHASE (DROSOPHILA MELANOGASTER STRAIN
                OREGON-R)"/CN


L2   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   433280-04-7  REGISTRY
CN   Synthase, N-acylneuraminate 9-phosphate (Drosophila melanogaster strain
     Oregon-R) (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   GenBank AF397531-derived protein GI 15213695
CN   Neu5Ac synthase (Drosophila melanogaster strain Oregon-R)
CN   sialic acid phosphate synthase (Drosophila melanogaster strain
     Oregon-R)
CN   sialic acid synthase (Drosophila melanogaster strain Oregon-R)
FS   PROTEIN SEQUENCE
MF   Unspecified
CI   MAN
SR   CA
LC   STN Files:   CA, CAPLUS

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
*** USE 'SQD' OR 'SQIDE' FORMATS TO DISPLAY SEQUENCE ***
               1 REFERENCES IN FILE CA (1957 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1957 TO DATE)


=> s E5;D
L3            1 "SIALIC ACID SYNTHASE"/CN


L3   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   37290-66-7  REGISTRY
CN   Synthase, N-acetylneuraminate (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   E.C. 4.1.3.19
CN   N-Acetylneuraminate synthase
CN   N-Acetylneuraminate-condensing enzyme
CN   Sialate synthase
CN   Sialic acid synthase
MF   Unspecified
CI   MAN
LC   STN Files:   BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, EMBASE, TOXCENTER,
       USPATFULL

*** STRUCTURE DI
```

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PASSWORD:
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NEWS 4	Aug 08	PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 5	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS 6	Aug 26	Sequence searching in REGISTRY enhanced
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NEWS 9	Sep 16	CA Section Thesaurus available in CAPLUS and CA
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NEWS 15	Dec 04	CSA files on STN
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NEWS 17	Dec 17	TOXCENTER enhanced with additional content
NEWS 18	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS 19	Jan 29	Simultaneous left and right truncation added to COMPENDEX, ENERGY, INSPEC
NEWS 20	Feb 13	CANCERLIT is no longer being updated
NEWS 21	Feb 24	METADEX enhancements
NEWS 22	Feb 24	PCTGEN now available on STN
NEWS 23	Feb 24	TEMA now available on STN
NEWS 24	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 25	Feb 26	PCTFULL now contains images
NEWS 26	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 27	Mar 20	EVENTLINE will be removed from STN
NEWS 28	Mar 24	PATDPAFULL now available on STN
NEWS 29	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 30	Apr 11	Display formats in DGENE enhanced
NEWS 31	Apr 14	MEDLINE Reload
NEWS 32	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 33	Jun 13	Indexing from 1947 to 1956 added to records in CA/CAPLUS
NEWS 34	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 35	Apr 28	RDISCLOSURE now available on STN
NEWS 36	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS 37	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS 38	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 39	May 16	CHEMREACT will be removed from STN
NEWS 40	May 19	Simultaneous left and right truncation added to WSCA
NEWS 41	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS 42	Jun 06	Simultaneous left and right truncation added to CBNB

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NEWS 43  Jun 06  PASCAL enhanced with additional data
NEWS 44  Jun 20  2003 edition of the FSTA Thesaurus is now available
NEWS 45  Jun 25  HSDB has been reloaded

NEWS EXPRESS  April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
              MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
              AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
NEWS HOURS    STN Operating Hours Plus Help Desk Availability
NEWS INTER    General Internet Information
NEWS LOGIN    Welcome Banner and News Items
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FILE 'HOME' ENTERED AT 13:31:00 ON 26 JUN 2003

=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

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DICTIONARY FILE UPDATES:  25 JUN 2003  HIGHEST RN 537653-06-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> e N-acetylmannosamine kinase/CN
E1            1     N-ACETYLMANNOSAMINE 6-P EPIMERASE (STREPTOCOCCUS SUIS STRAIN
                     DAT2 GENE NANE)/CN
E2            1     N-ACETYLMANNOSAMINE 6-PHOSPHATE/CN
E3            1 --> N-ACETYLMANNOSAMINE KINASE/CN
E4            1     N-ACETYLMANNOSAMINE KINASE (ESCHERICHIA COLI STRAIN O157:H7
                    GENE ECS4095)/CN
E5            1     N-ACETYLMANNOSAMINE KINASE (FUSOBACTERIUM NUCLEATUM NUCLEATU
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E6            1     N-ACETYLMANNOSAMINE SYNTHETASE (CAMPYLOBACTER JEJUNI STRAIN
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E7          1     N-ACETYLMANNOSAMINE TETRAACETATE/CN
E8          1     N-ACETYLMANNOSAMINE TO A-ACETYLGLUCOSAMINE EPIMERASE (ESCHER
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E9          1     N-ACETYLMANNOSAMINE-2-EPIMERASE/CN
E10         1     N-ACETYLMANNOSAMINE-6-P (STREPTOCOCCUS PYOGENES STRAIN MGAS3
                  15 GENE SPYM3-0179)/CN
E11         1     N-ACETYLMANNOSAMINE-6-P (STREPTOCOCCUS PYROGENES STRAIN MGAS
                  8232 GENE SPYM18-0233)/CN
E12         1     N-ACETYLMANNOSAMINE-6-P EPIMERASE (MYCOPLASMA PULMONIS STRAI
                  N UAB CTIP GENE MYPU-3630)/CN

=> s E3;D
L1          1 "N-ACETYLMANNOSAMINE KINASE"/CN


L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   9027-53-6  REGISTRY
CN   Kinase (phosphorylating), acylmannosamine (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   Acetylaminodeoxymannokinase
CN   Acetylmannosamine kinase
CN   Acylaminodeoxymannokinase
CN   Acylmannosamine kinase
CN   E.C. 2.7.1.60
CN   N-Acetylmannosamine 6-kinase
CN   N-Acetylmannosamine kinase
CN   N-Acyl-D-mannosamine kinase
DR   9027-62-7
MF   Unspecified
CI   MAN
LC   STN Files:   BIOSIS, CA, CAPLUS, TOXCENTER

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
              38 REFERENCES IN FILE CA (1957 TO DATE)
              38 REFERENCES IN FILE CAPLUS (1957 TO DATE)


=> e sialic acid phosphate synthase/CN
E1          1     SIALIC ACID LYASE/CN
E2          1     SIALIC ACID PERMEASE (ESCHERICHIA COLI CLONE PSX600 GENE NAN
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E3          0 --> SIALIC ACID PHOSPHATE SYNTHASE/CN
E4          1     SIALIC ACID PHOSPHATE SYNTHASE (DROSOPHILA MELANOGASTER STRA
                  IN OREGON-R)/CN
E5          1     SIALIC ACID SYNTHASE/CN
E6          1     SIALIC ACID SYNTHASE (CAMPYLOBACTER JEJUNI STRAIN MSC-57360
                  GENE NEUB1)/CN
E7          1     SIALIC ACID SYNTHASE (CAMPYLOBACTER JEJUNI STRAIN OH4384)/CN
E8          1     SIALIC ACID SYNTHASE (CHLOROBIUM TEPIDUM STRAIN TLS GENE CT0
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E9          1     SIALIC ACID SYNTHASE (CLOSTRIDIUM ACETOBUTYLICUM STRAIN ATCC
                   824 GENE CAC2187)/CN
E10         1     SIALIC ACID SYNTHASE (DROSOPHILA MELANOGASTER STRAIN OREGON-
                  R)/CN
E11         1     SIALIC ACID SYNTHASE (HELICOBACTER PYLORI STRAIN J99 GENE NE
                  UB)/CN
E12         1     SIALIC ACID SYNTHASE (HELICOBACTER PYLORI STRAIN NQ1624 GENE
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=> s E4;D
L2          1 "SIALIC ACID PHOSPHATE SYNTHASE (DROSOPHILA MELANOGASTER STRAIN
              OREGON-R)"/CN
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L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 433280-04-7 REGISTRY
CN Synthase, N-acylneuraminate 9-phosphate (Drosophila melanogaster strain Oregon-R) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN GenBank AF397531-derived protein GI 15213695
CN Neu5Ac synthase (Drosophila melanogaster strain Oregon-R)
CN **sialic acid phosphate synthase (Drosophila melanogaster strain Oregon-R)**
CN sialic acid synthase (Drosophila melanogaster strain Oregon-R)
FS PROTEIN SEQUENCE
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS

RELATED SEQUENCES AVAILABLE WITH SEQLINK

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
*** USE 'SQD' OR 'SQIDE' FORMATS TO DISPLAY SEQUENCE ***
1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> s E5;D
L3 1 "SIALIC ACID SYNTHASE"/CN

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 37290-66-7 REGISTRY
CN Synthase, N-acetylneuraminate (9CI) (CA INDEX NAME)
OTHER NAMES:
CN E.C. 4.1.3.19
CN N-Acetylneuraminate synthase
CN N-Acetylneuraminate-condensing enzyme
CN Sialate synthase
CN **Sialic acid synthase**
MF Unspecified
CI MAN
LC STN Files: BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, EMBASE, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
38 REFERENCES IN FILE CA (1957 TO DATE)
38 REFERENCES IN FILE CAPLUS (1957 TO DATE)

1: J Biol Chem. 2000 Jun 9;275(23):17869-77. Related Articles, Links

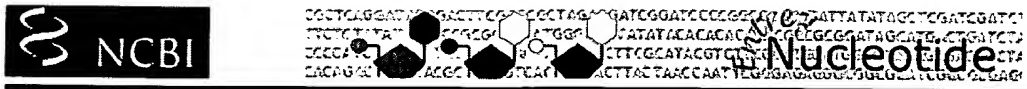
Cloning and expression of the human N-acetylneuraminic acid phosphate synthase gene with 2-keto-3-deoxy-D-glycero-D-galacto-nononic acid biosynthetic ability.

Lawrence SM, Huddleston KA, Pitts LR, Nguyen N, Lee YC, Vann WF, Coleman TA, Betenbaugh MJ.

Departments of Chemical Engineering and Biology, The Johns Hopkins University, Baltimore, Maryland 21218, USA.

Sialic acids participate in many important biological recognition events, yet eukaryotic sialic acid biosynthetic genes are not well characterized. In this study, we have identified a novel human gene based on homology to the Escherichia coli sialic acid synthase gene (neuB). The human gene is ubiquitously expressed and encodes a 40-kDa enzyme. The gene partially restores sialic acid synthase activity in a neuB-negative mutant of E. coli and results in N-acetylneuraminic acid (Neu5Ac) and 2-keto-3-deoxy-D-glycero-D-galacto-nononic acid (KDN) production in insect cells upon recombinant baculovirus infection. In vitro the human enzyme uses N-acetylmannosamine 6-phosphate and mannose 6-phosphate as substrates to generate phosphorylated forms of Neu5Ac and KDN, respectively, but exhibits much higher activity toward the Neu5Ac phosphate product.

PMID: 10749855 [PubMed - indexed for MEDLINE]



1: AF397531. Drosophila melano...[gi:15213694] Links

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DEFINITION  Drosophila melanogaster Neu5Ac synthase mRNA, complete cds.
ACCESSION   AF397531
VERSION     AF397531.1  GI:15213694
KEYWORDS    .
SOURCE      Drosophila melanogaster (fruit fly)
  ORGANISM  Drosophila melanogaster
            Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
            Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
            Ephydroidea; Drosophilidae; Drosophila.
REFERENCE   1  (bases 1 to 1194)
  AUTHORS   Kim,K., Lawrence,S.M., Park,J., Pitts,L., Vann,W.F.,
            Betenbaugh,M.J. and Palter,K.B.
  TITLE     Expression of a functional Drosophila melanogaster
            N-acetylneuraminic acid (Neu5Ac) phosphate synthase gene: evidence
            for endogenous sialic acid biosynthetic ability in insects
  JOURNAL   Glycobiology 12 (2), 73-83 (2002)
  MEDLINE   21883822
   PUBMED   11886840
REFERENCE   2  (bases 1 to 1194)
  AUTHORS   Kim,K., Lawrence,S.M., Park,J., Pitts,L., Vann,W.F.,
            Betenbaugh,M.J. and Palter,K.B.
  TITLE     Direct Submission
  JOURNAL   Submitted (09-JUL-2001) Department of Biology, Temple University,
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BASE COUNT      353 a    259 c    294 g    288 t
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1: J Biol Chem. 1997 Sep 26;272(39):24319-24. Related Articles, Links

A bifunctional enzyme catalyzes the first two steps in N-acetylneuraminic acid biosynthesis of rat liver. Molecular cloning and functional expression of UDP-N-acetyl-glucosamine 2-epimerase/N-acetylmannosamine kinase.

Stasche R, Hinderlich S, Weise C, Effertz K, Lucka L, Moormann P, Reutter W.

Institut fur Molekularbiologie und Biochemie, Freie Universitat Berlin, Arnimallee 22, D-14195 Berlin-Dahlem, Germany.

N-Acetylneuraminic acid (Neu5Ac) is the precursor of sialic acids, a group of important molecules in biological recognition systems. Biosynthesis of Neu5Ac is initiated and regulated by its key enzyme, UDP-N-acetylglucosamine 2-epimerase (UDP-GlcNAc 2-epimerase, EC 5.1. 3.14)/N-acetylmannosamine kinase (ManNAc kinase, EC 2.7.1.60) in rat liver (Hinderlich, S., Stasche, R., Zeitler, R., and Reutter, W. (1997) J. Biol. Chem. 272, 24313-24318). In the present paper we report the isolation and characterization of a cDNA clone encoding this bifunctional enzyme. An open reading frame of 2166 base pairs encodes 722 amino acids with a predicted molecular mass of 79 kDa. The deduced amino acid sequence contains exact matches of the sequences of five peptides derived from tryptic cleavage of the enzyme. The recombinant bifunctional enzyme was expressed in COS7 cells, where it displayed both epimerase and kinase activity. Distribution of UDP-GlcNAc 2-epimerase/ManNAc kinase in the cytosol of several rat tissues was investigated by determining both specific enzyme activities. Secreting organs (liver, salivary glands, and intestinal mucosa) showed high specific activities of UDP-GlcNAc 2-epimerase/ManNAc kinase, whereas significant levels of these activities were absent from other organs (lung, kidney, spleen, brain, heart, skeletal muscle, and testis). Northern blot analysis revealed no UDP-GlcNAc 2-epimerase/ManNAc kinase mRNA in the non-secreting tissues.

PMID: 9305888 [PubMed - indexed for MEDLINE]

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Main Menu | Search Form | Posting Counts | Show S Numbers | Edit S Numbers | Preferences | Cases

Search Results -

Terms	Documents
CMPSIL-1 or CMPSIL-W10	7

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L4

Refine Search | Recall Text | Clear

Search History

DATE: Wednesday, October 23, 2002 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ			
L4	CMPSIL-1 or CMPSIL-W10	7	L4
L3	L2 same (insect cell or Spodoptera or Tricoplusia or Estigmena or Drosophila)	0	L3
L2	L1 with (synthes$$$$ or biosynthe$$$$)	42	L2
L1	(CMP-sialic acid or CMP-NANA or CMP-KDN)	149	L1

END OF SEARCH HISTORY

WEST

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Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 6168934 B1

L4: Entry 1 of 7 File: USPT Jan 2, 2001

US-PAT-NO: 6168934
DOCUMENT-IDENTIFIER: US 6168934 B1

TITLE: Oligosaccharide enzyme substrates and inhibitors: methods and compositions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 5759823 A

L4: Entry 2 of 7 File: USPT Jun 2, 1998

US-PAT-NO: 5759823
DOCUMENT-IDENTIFIER: US 5759823 A

TITLE: Ogligosaccharide enzyme substrates and inhibitors: methods and compostions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 5593887 A

L4: Entry 3 of 7 File: USPT Jan 14, 1997

US-PAT-NO: 5593887
DOCUMENT-IDENTIFIER: US 5593887 A

TITLE: Oligosaccharide enzyme substrates and inhibitors: methods and compositions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 4. Document ID: US 5461143 A

L4: Entry 4 of 7 File: USPT Oct 24, 1995

US-PAT-NO: 5461143
DOCUMENT-IDENTIFIER: US 5461143 A

TITLE: Oligosaccharide enzyme substrates and inhibitors: methods and compositions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 5. Document ID: US 5278299 A

L4: Entry 5 of 7 File: USPT Jan 11, 1994

US-PAT-NO: 5278299
DOCUMENT-IDENTIFIER: US 5278299 A

TITLE: Method and composition for synthesizing sialylated glycosyl compounds

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Drawi Desc | Image

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☐ 6. Document ID: WO 9216640 A1

L4: Entry 6 of 7 File: EPAB Oct 1, 1992

PUB-NO: WO009216640A1
DOCUMENT-IDENTIFIER: WO 9216640 A1
TITLE: OLIGOSACCHARIDE ENZYME SUBSTRATES AND INHIBITORS: METHODS AND COMPOSITIONS

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Drawi Desc | Image

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☐ 7. Document ID: US 5593887 A

L4: Entry 7 of 7 File: DWPI Jan 14, 1997

DERWENT-ACC-NO: 1997-099475
DERWENT-WEEK: 200113

TITLE: Phagemids CMPSIL-1 and CMPSIL-W10 - for over-expression of CMP-NeuAc synthetase (CMP sialic acid synthetase) in E. coli

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Drawi Desc | Image

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Terms	Documents
CMPSIL-1 or CMPSIL-W10	7

Display Format: - Change Format

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Main Menu | Search Form | Posting Counts | Show S Numbers | Edit S Numbers | Preferences | Cases

Search Results -

Terms	Documents
L2 same (insect cell or Spodoptera or Tricoplusia or Estigmena or Drosophila)	0

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L3

Refine Search

Recall Text | Clear

Search History

DATE: Wednesday, October 23, 2002 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
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L3	L2 same (insect cell or Spodoptera or Tricoplusia or Estigmena or Drosophila)	0	L3
L2	L1 with (synthes$$$$ or biosynthe$$$$)	42	L2
L1	(CMP-sialic acid or CMP-NANA or CMP-KDN)	149	L1

END OF SEARCH HISTORY

WEST

Generate Collection | Print

Search Results - Record(s) 1 through 42 of 42 returned.

☐ 1. Document ID: US 20020148791 A1

L2: Entry 1 of 42 File: PGPB Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020148791
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020148791 A1

TITLE: Carbohydrate purification using ultrafiltration, reverse osmosis and nanofiltration

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
DeFrees, Shawn	North Wales	PA	US	

US-CL-CURRENT: 210/767; 536/53

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 20020142386 A1

L2: Entry 2 of 42 File: PGPB Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020142386
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020142386 A1

TITLE: Engineering intracellular sialylation pathways

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Betenbaugh, Michael J.	Baltimore	MD	US	
Lawrence, Shawn	Dobbs Ferry	NY	US	
Lee, Yuan C.	Timonium	MD	US	
Coleman, Timothy A.	Gaithersburg	MD	US	

US-CL-CURRENT: 435/69.1; 435/325

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 20020142370 A1

L2: Entry 3 of 42 File: PGPB Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020142370

PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020142370 A1

TITLE: Practical in vitro sialylation of recombinant glycoproteins

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Paulson, James C.	Del Mar	CA	US	
Bayer, Robert J.	San Diego	CA	US	
Sjoberg, Eric	San Diego	CA	US	

US-CL-CURRENT: 435/68.1; 435/200, 536/53

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 20020127682 A1

L2: Entry 4 of 42 File: PGPB Sep 12, 2002

PGPUB-DOCUMENT-NUMBER: 20020127682
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020127682 A1

TITLE: Glycosyltransferases for biosynthesis of oligosaccharides, and genes encoding them

PUBLICATION-DATE: September 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gotschlich, Emil C.	New York	NY	US	

US-CL-CURRENT: 435/193; 435/320.1, 435/325, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 20020119516 A1

L2: Entry 5 of 42 File: PGPB Aug 29, 2002

PGPUB-DOCUMENT-NUMBER: 20020119516
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020119516 A1

TITLE: Practical in vitro sialylation of recombinant glycoproteins

PUBLICATION-DATE: August 29, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Paulson, James C.	Del Mar	CA	US	
Bayer, Robert J.	San Diego	CA	US	
Sjoberg, Eric	San Diego	CA	US	

US-CL-CURRENT: 435/68.1; 435/193

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 6. Document ID: US 20020042369 A1

L2: Entry 6 of 42 File: PGPB Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020042369
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020042369 A1

TITLE: Campylobacter glycosyltransferases for biosynthesis of gangliosides and ganglioside mimics

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gilbert, Michel	Hull		CA	
Wakarchuk, Warren W.	Gloucester		CA	

US-CL-CURRENT: 514/12; 435/193, 435/320.1, 435/325, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 7. Document ID: US 20020001831 A1

L2: Entry 7 of 42 File: PGPB Jan 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020001831
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020001831 A1

TITLE: Low cost manufacture of oligosaccharides

PUBLICATION-DATE: January 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Defrees, Shawn	North Wales	PA	US	
Johnson, Karl	Willow Grove	PA	US	

US-CL-CURRENT: 435/101; 435/84, 536/53

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 8. Document ID: US 6465612 B1

L2: Entry 8 of 42 File: USPT Oct 15, 2002

US-PAT-NO: 6465612
DOCUMENT-IDENTIFIER: US 6465612 B1

TITLE: Synthetic peptides, conjugation reagents and methods

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 9. Document ID: US 6454946 B1

L2: Entry 9 of 42 File: USPT Sep 24, 2002

US-PAT-NO: 6454946
DOCUMENT-IDENTIFIER: US 6454946 B1

TITLE: Carbohydrate purification using ultrafiltration, reverse osmosis and nanofiltration

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 10. Document ID: US 6440703 B1

L2: Entry 10 of 42 File: USPT Aug 27, 2002

US-PAT-NO: 6440703
DOCUMENT-IDENTIFIER: US 6440703 B1

TITLE: Enzymatic synthesis of gangliosides

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 11. Document ID: US 6403306 B1

L2: Entry 11 of 42 File: USPT Jun 11, 2002

US-PAT-NO: 6403306
DOCUMENT-IDENTIFIER: US 6403306 B1

TITLE: Serogroup-specific nucleotide sequences in the molecular typing of bacterial isolates and the preparation of vaccines thereto

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 12. Document ID: US 6399336 B1

L2: Entry 12 of 42 File: USPT Jun 4, 2002

US-PAT-NO: 6399336
DOCUMENT-IDENTIFIER: US 6399336 B1

TITLE: Practical in vitro sialylation of recombinant glycoproteins

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 13. Document ID: US 6395717 B1

L2: Entry 13 of 42 File: USPT May 28, 2002

US-PAT-NO: 6395717
DOCUMENT-IDENTIFIER: US 6395717 B1

TITLE: Therapeutic drug for endotoxin blood symptom and multi-organ failure induced thereby

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 14. Document ID: US 6342382 B1

L2: Entry 14 of 42 File: USPT Jan 29, 2002

US-PAT-NO: 6342382
DOCUMENT-IDENTIFIER: US 6342382 B1

TITLE: Glycosyltransferases for biosynthesis of oligosaccharides, and genes encoding them

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 15. Document ID: US 6191271 B1

L2: Entry 15 of 42 File: USPT Feb 20, 2001

US-PAT-NO: 6191271
DOCUMENT-IDENTIFIER: US 6191271 B1

TITLE: Synthetic divalent sLex containing polylactosamines and methods for use

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 16. Document ID: US 6168934 B1

L2: Entry 16 of 42 File: USPT Jan 2, 2001

US-PAT-NO: 6168934
DOCUMENT-IDENTIFIER: US 6168934 B1

TITLE: Oligosaccharide enzyme substrates and inhibitors: methods and compositions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 17. Document ID: US 6117651 A

L2: Entry 17 of 42 File: USPT Sep 12, 2000

US-PAT-NO: 6117651
DOCUMENT-IDENTIFIER: US 6117651 A

TITLE: Expression vectors

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 18. Document ID: US 6083931 A

L2: Entry 18 of 42 File: USPT Jul 4, 2000

US-PAT-NO: 6083931
DOCUMENT-IDENTIFIER: US 6083931 A

TITLE: Method of inhibiting cancer metastasis

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 19. Document ID: US 5965544 A

L2: Entry 19 of 42 File: USPT Oct 12, 1999

US-PAT-NO: 5965544
DOCUMENT-IDENTIFIER: US 5965544 A

TITLE: Synthetic multivalent sLe.sup.x containing polylactosamines and methods for use

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 20. Document ID: US 5945322 A

L2: Entry 20 of 42 File: USPT Aug 31, 1999

US-PAT-NO: 5945322
DOCUMENT-IDENTIFIER: US 5945322 A

TITLE: Glycosyltransferases for biosynthesis of oligosaccharides, and genes encoding them

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 21. Document ID: US 5880100 A

L2: Entry 21 of 42 File: USPT Mar 9, 1999

US-PAT-NO: 5880100
DOCUMENT-IDENTIFIER: US 5880100 A

TITLE: Method for inhibiting binding of human lens cells

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 22. Document ID: US 5811539 A

L2: Entry 22 of 42 File: USPT Sep 22, 1998

US-PAT-NO: 5811539
DOCUMENT-IDENTIFIER: US 5811539 A

TITLE: Process for isolating and purifying nucleotide-activated sugars from biological sources

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 23. Document ID: US 5798233 A

L2: Entry 23 of 42 File: USPT Aug 25, 1998

US-PAT-NO: 5798233
DOCUMENT-IDENTIFIER: US 5798233 A

TITLE: Glycosyltransferases for biosynthesis of oligosaccharides, and genes encoding them

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 24. Document ID: US 5770407 A

L2: Entry 24 of 42 File: USPT Jun 23, 1998

US-PAT-NO: 5770407
DOCUMENT-IDENTIFIER: US 5770407 A

TITLE: Process for preparing nucleotide inhibitors of glycosyltransferases

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 25. Document ID: US 5759823 A

L2: Entry 25 of 42 File: USPT Jun 2, 1998

US-PAT-NO: 5759823
DOCUMENT-IDENTIFIER: US 5759823 A

TITLE: Ogligosaccharide enzyme substrates and inhibitors: methods and compostions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 26. Document ID: US 5705367 A

L2: Entry 26 of 42 File: USPT Jan 6, 1998

US-PAT-NO: 5705367
DOCUMENT-IDENTIFIER: US 5705367 A

TITLE: Glycosyltransferases for biosynthesis of oligosaccharides, and genes encoding them

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 27. Document ID: US 5654412 A

L2: Entry 27 of 42 File: USPT Aug 5, 1997

US-PAT-NO: 5654412
DOCUMENT-IDENTIFIER: US 5654412 A

TITLE: Processes for the synthesis of sialyl Lewis.sup.x compounds

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 28. Document ID: US 5627271 A

L2: Entry 28 of 42 File: USPT May 6, 1997

US-PAT-NO: 5627271
DOCUMENT-IDENTIFIER: US 5627271 A

TITLE: Glycolipids, their preparation and use

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 29. Document ID: US 5621086 A

L2: Entry 29 of 42 File: USPT Apr 15, 1997

US-PAT-NO: 5621086
DOCUMENT-IDENTIFIER: US 5621086 A

TITLE: Sialic acid derivative and method of manufacturing it

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 30. Document ID: US 5593887 A

L2: Entry 30 of 42 File: USPT Jan 14, 1997

US-PAT-NO: 5593887
DOCUMENT-IDENTIFIER: US 5593887 A

TITLE: Oligosaccharide enzyme substrates and inhibitors: methods and compositions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 31. Document ID: US 5545553 A

L2: Entry 31 of 42 File: USPT Aug 13, 1996

US-PAT-NO: 5545553
DOCUMENT-IDENTIFIER: US 5545553 A

TITLE: Glycosyltransferases for biosynthesis of oligosaccharides, and genes encoding them

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 32. Document ID: US 5461143 A

L2: Entry 32 of 42 File: USPT Oct 24, 1995

US-PAT-NO: 5461143
DOCUMENT-IDENTIFIER: US 5461143 A

TITLE: Oligosaccharide enzyme substrates and inhibitors: methods and compositions

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 33. Document ID: US 5418129 A

L2: Entry 33 of 42 File: USPT May 23, 1995

US-PAT-NO: 5418129
DOCUMENT-IDENTIFIER: US 5418129 A

TITLE: Blood treatment method

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 34. Document ID: US 5405753 A

L2: Entry 34 of 42 File: USPT Apr 11, 1995

US-PAT-NO: 5405753
DOCUMENT-IDENTIFIER: US 5405753 A

TITLE: CMP-activated, fluorescing sialic acids, as well as processes for their preparation

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 35. Document ID: US 5374541 A

L2: Entry 35 of 42 File: USPT Dec 20, 1994

US-PAT-NO: 5374541
DOCUMENT-IDENTIFIER: US 5374541 A

TITLE: Combined use of .beta.-galactosidase and sialyltransferase coupled with in situ regeneration of CMP-sialic acid for one pot synthesis of oligosaccharides

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 36. Document ID: US 5278299 A

L2: Entry 36 of 42 File: USPT Jan 11, 1994

US-PAT-NO: 5278299
DOCUMENT-IDENTIFIER: US 5278299 A

TITLE: Method and composition for synthesizing sialylated glycosyl compounds

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 37. Document ID: US 5240833 A

L2: Entry 37 of 42 File: USPT Aug 31, 1993

US-PAT-NO: 5240833
DOCUMENT-IDENTIFIER: US 5240833 A

TITLE: Method for the production of monoclonal antibodies directed to tumor-associated gangliosides and fucogangliosides

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 38. Document ID: US 5070079 A

L2: Entry 38 of 42 File: USPT Dec 3, 1991

US-PAT-NO: 5070079
DOCUMENT-IDENTIFIER: US 5070079 A

TITLE: Pharmaceutical compositions containing cytidine monophosphate of 5-acetamido-3-, 5-D-deoxy-D-glycero-D-galacto-nonulosamic acid

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☑ 39. Document ID: US 4704361 A

L2: Entry 39 of 42 File: USPT Nov 3, 1987

US-PAT-NO: 4704361
DOCUMENT-IDENTIFIER: US 4704361 A

TITLE: Pharmaceutical compositions containing the cytidine monophospate of 5-acetamido-3,5-dideoxy-D-glycero-D-galactononulosaminic acid and a method for preparing said compound

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☑ 40. Document ID: JP 06141880 A

L2: Entry 40 of 42 File: JPAB May 24, 1994

PUB-NO: JP406141880A
DOCUMENT-IDENTIFIER: JP 06141880 A
TITLE: METHOD FOR SYNTHESIZING CMP-KDN

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 41. Document ID: JP 07145191 A

L2: Entry 41 of 42 File: DWPI Jun 6, 1995

DERWENT-ACC-NO: 1995-237194
DERWENT-WEEK: 199531

TITLE: New pyrimidine nucleoside-substd. galactosyl:phosphonate derivs. - used as sugar chain biosynthesis inhibitors and antiinflammatory agents

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Clip Img | Image

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☐ 42. Document ID: CA 2110582 C WO 9222563 A1 EP 588848 A1 EP 589933 A1 EP 589951 A1 US 5352670 A JP 06509703 W JP 06510661 W JP 06510744 W JP 06510745 W JP 06510746 W JP 07502011 W EP 589933 B1 ES 2100346 T3 US 5872096 A US 5882901 A CA 2110797 C

L2: Entry 42 of 42 File: DWPI Feb 27, 2001

DERWENT-ACC-NO: 1993-018068
DERWENT-WEEK: 200115

TITLE: New silyl Lewis a derivs. - modulate cell-mediated immune responses including inflammatory responses

Generate Collection | Print

Terms	Documents
L1 with (synthes$$$$ or biosynthe$$$$)	42

Display Format: - Change Format

Previous Page Next Page

L2: Entry 40 of 42 File: JPAB May 24, 1994

PUB-NO: JP406141880A
DOCUMENT-IDENTIFIER: JP 06141880 A
TITLE: METHOD FOR SYNTHESIZING CMP-KDN

PUBN-DATE: May 24, 1994

INVENTOR-INFORMATION:
NAME COUNTRY
ITO, FUMIO
IWASAKI, TAISUKE

ASSIGNEE-INFORMATION:
NAME COUNTRY
SNOW BRAND MILK PROD CO LTD

APPL-NO: JP04321161
APPL-DATE: November 5, 1992

US-CL-CURRENT: 435/89
INT-CL (IPC): C12P 19/30

ABSTRACT:

PURPOSE: To obtain cytidine 5'-monophosphate-2-keto-3-deoxy-D-glycero-D- galacto-nononic acid (CMP-KDN) in a sufficient yield by reacting cytidine 5'- triphosphate (CTP) with the KDN in the presence of an enzymic extract solution of a bovine submandibular gland or a porcine lever.

CONSTITUTION: CTP is made to react with KDN in the presence of an enzymic extract solution of a bovine submandibular gland or a porcine lever to synthesize CMP-KDN respectively at about 49.5% and 22.7% synthetic ratio. The enzymic extract solution of the bovine submandibular gland or porcine lever is a fraction with a 35-60% saturated ammonium sulfate of an aqueous extract supernatant of the bovine submandibular gland or porcine lever.

L2: Entry 40 of 42 File: JPAB May 24, 1994

PUB-NO: JP406141880A
DOCUMENT-IDENTIFIER: JP 06141880 A
TITLE: METHOD FOR SYNTHESIZING CMP-KDN

PUBN-DATE: May 24, 1994

INVENTOR-INFORMATION:
NAME COUNTRY
ITO, FUMIO
IWASAKI, TAISUKE

US-CL-CURRENT: 435/89
INT-CL (IPC): C12P 19/30

ABSTRACT:

PURPOSE: To obtain cytidine 5'-monophosphate-2-keto-3-deoxy-D-glycero-D- galacto-nononic acid (CMP-KDN) in a sufficient yield by reacting cytidine 5'- triphosphate (CTP) with the KDN in the presence of an enzymic extract solution of a bovine submandibular gland or a porcine lever.

CONSTITUTION: CTP is made to react with KDN in the presence of an enzymic extract solution of a bovine submandibular gland or a porcine lever to synthesize CMP-KDN respectively at about 49.5% and 22.7% synthetic ratio. The enzymic extract solution of the bovine submandibular gland or porcine lever is a fraction with a 35-60% saturated ammonium sulfate of an aqueous extract supernatant of the bovine submandibular gland or porcine lever.

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L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
ACCESSION NUMBER: 2001:914804 CAPLUS
DOCUMENT NUMBER: 136:364440
TITLE: Cloning and expression of human sialic acid pathway genes to generate CMP-sialic acids in insect cells
AUTHOR(S): Lawrence, Shawn M.; Huddleston, Kathleen A.; Tomiya, Noboru; Nguyen, Nam; Lee, Yuan C.; Vann, Willie F.; Coleman, Timothy A.; Betenbaugh, Michael J.
CORPORATE SOURCE: Department of Chemical Engineering, The Johns Hopkins University, Baltimore, MD, 21218, USA
SOURCE: Glycoconjugate Journal (2001), 18(3), 205-213
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The addn. of sialic acid residues to glycoproteins can affect important protein properties including biol. activity and in vivo circulatory half-life. For sialylation to occur, the donor sugar nucleotide cytidine monophospho-sialic acid (CMP-SA) must be generated and enzymically transferred to an acceptor oligosaccharide. However, examn. of **insect cells** grown in serum-free medium revealed negligible native levels of the most common sialic acid nucleotide, **CMP-N-acetylneuraminic acid** (CMP-Neu5Ac). To increase substrate levels, the enzymes of the metabolic pathway for **CMP-SA** synthesis have been engineered into **insect cells** using the baculovirus expression system. In this study, a human CMP-sialic acid synthase cDNA was identified and found to encode a protein with 94% identity to the murine homolog. The human CMP-sialic acid synthase (Cmp-Sas) is ubiquitously expressed in human cells from multiple tissues. When expressed in insect cells using the baculovirus vector, the encoded protein is functional and localizes to the nucleus as in mammalian cells. In addn., co-expression of Cmp-Sas with the recently cloned sialic acid phosphate synthase with N-acetylmannosamine feeding yields intracellular CMP-Neu5Ac levels 30 times higher than those obsd. in unsupplemented CHO cells. The absence of any one of these three components abolishes CMP-Neu5Ac prodn. in vivo. However, when N-acetylmannosamine feeding is omitted, the sugar nucleotide form of deaminated Neu5Ac, **CMP-2-keto-3-deoxy-D-glycero-D-galacto-nononic acid** (**CMP-KDN**), is produced instead, indicating that alternative sialic acid glycoforms may eventually be possible in **insect cells**. The human CMP-SAS enzyme is also capable of CMP-N-glycolylneuraminic acid (CMP-Neu5Gc) synthesis when provided with the proper substrate. Engineering the CMP-SA metabolic pathway may be beneficial in various cell lines in which CMP-Neu5Ac prodn. limits sialylation of glycoproteins or other glycans.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 3 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
ACCESSION NUMBER: 2001323924 BIOSIS
DOCUMENT NUMBER: PREV200100323924
TITLE: Determination of nucleotides and sugar nucleotides involved in protein glycosylation by high-performance anion-exchange chromatography: Sugar nucleotide contents in cultured insect cells and mammalian cells.
AUTHOR(S): Tomiya, Noboru; Ailor, Eric; Lawrence, Shawn M.; Betenbaugh, Michael J.; Lee, Yuan C. (1)
CORPORATE SOURCE: (1) Department of Biology, Johns Hopkins University, Baltimore, MD, 21218: yclee@jhu.edu USA
SOURCE: Analytical Biochemistry, (June 1, 2001) Vol. 293, No. 1, pp. 129-137. print.
ISSN: 0003-2697.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We have developed a simple and highly sensitive HPLC method for determination of cellular levels of sugar nucleotides and related nucleotides in cultured cells. Separation of 9 sugar nucleotides (CMP-Neu5Ac, CMP-Neu5Gc, **CMP-KDN**, UDP-Gal, UDP-Glc, UDP-GalNAc, UDP-GlcNAc, GDP-Fuc, GDP-Man) and 12 nucleotides (AMP, ADP, ATP, CMP, CDP, CTP, GMP, GDP, GTP, UMP, UDP, and UTP) was examined by reversed-phase HPLC and high-performance anion-exchange chromatography (HPAEC). Although the reversed-phase HPLC, using an ion-pairing reagent, gave a good separation of the 12 nucleotides, it did not separate sufficiently the sugar nucleotides for quantification. On the other hand, the HPAEC method gave an excellent and reproducible separation of all nucleotides and sugar nucleotides with high sensitivity and reproducibility. We applied the HPAEC method to determine the intracellular sugar nucleotide levels of cultured **Spodoptera** frugiperda (Sf9) and Trichoplusia ni (High Five, BTN-TN-5B1-4) **insect cells**, and compared them with those in Chinese hamster ovary (CHO-K1) cells. Sf9 and High Five cells showed concentrations of UDP-GlcNAc, UDP-Gal, UDP-Glc, GDP-Fuc, and GDP-Man equal to or higher than those in CHO cells. CMP-Neu5Ac was detected in CHO cells, but it was not detected in Sf9 and High Five cells. In conclusion, the newly developed HPAEC method could provide valuable information necessary for generating sialylated complex-type N-glycans in insect or other cells, either native or genetically manipulated.

L7 ANSWER 3 OF 3 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
ACCESSION NUMBER: 1993:408634 BIOSIS
DOCUMENT NUMBER: PREV199396074359
TITLE: Biosynthesis and secretion of human interleukin 2 glycoprotein variants from baculovirus-infected Sf21 cells: Characterization of polypeptides and posttranslational modifications.
AUTHOR(S): Grabenhorst, Eckart; Hofer, Bernd; Nimtz, Manfred; Jaeger, Volker; Conradt, Harald S. (1)
CORPORATE SOURCE: (1) Dep. Cell Biology Genetics, Gesellschaft Biotechnologische Forschung, Mascheroder Weg 1, W-3300 Braunschweig Germany
SOURCE: European Journal of Biochemistry, (1993) Vol. 215, No. 1, pp. 189-197.
ISSN: 0014-2956.
DOCUMENT TYPE: Article
LANGUAGE: English
AB Human interleukin 2 (IL-2) and human IL-2 mutant proteins, with artificially introduced N-glycosylation or O-glycosylation sites, have

been expressed in a lepidopteran cell line (Sf21, **Spodoptera** frugiperda) using recombinant baculovirus vectors. Only approximately 25% of the total recombinant IL-2 protein synthesized by Sf21 cells was secreted into the culture medium. Significant N-terminal truncations were detected in the secreted polypeptides (up to 85% of the molecules). Alanine and proline were absent in the major truncated forms; the first 3-5 amino acids were also absent in a small proportion of the purified proteins. The introduction of potential artificial O-glycosylation peptide sequences (..GGKAPTPPPK..), to the C-terminus or between positions 80 and 81 of the IL-2 polypeptide chain, resulted in the secretion of unglycosylated and O-glycosylated variant forms. Fast atom bombardment mass spectrometry, compositional analysis and methylation analysis, of the tryptic glycopeptide APTPPPK, revealed the presence of either GalNAc or the disaccharide Gal(beta-1-3)GalNAc as the only carbohydrate constituents attached exclusively to Thr in this peptide, in a specific ratio for each individual IL-2 mutant protein. The Gal(beta-1-3)GalNAc protein forms could be partially altered in vitro to mammalian-type glycoforms by porcine liver beta-galactoside alpha-2,3-sialyltransferase in the presence of **CMP-N-acetylneuraminic acid**. An IL-2 mutant form, with an 11-amino-acid peptide of human interferon-beta at position 4, which includes its only N-glycosylation site, had exclusively truncated proximally fucosylated oligomannosidic glycans; Man-3GlcNAc(Fuc(alpha-1-6))GlcNAc or Man-2GlcNAc(Fuc(alpha-1-6))GlcNAc structures, in a ratio of 3:1, were detected in the secreted proteins. No evidence was obtained for the presence of secreted proteins with complex oligosaccharide chains, irrespective of the cell-culture conditions used or the harvesting time, for infected cells with recombinant baculovirus constructs.